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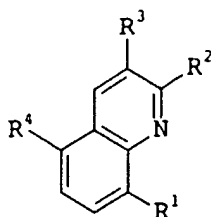
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CLEAN COPY OF ALL CLAIMS

1. (amended) A cyclohexenonequinolinoyl derivative of the formula I



where:

R¹ is hydrogen, nitro, halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkoxyiminomethyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-haloalkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylsulfonyl, aminosulfonyl, N-(C₁-C₆-alkyl)aminosulfonyl,

N, N-di-(C₁-C₆-alkyl) aminosulfonyl ,

N-(C₁-C₆-alkylsulfonyl)amino,

N-(C₁-C₆-haloalkylsulfonyl)amino,

N-(C₁-C₆-alkyl)-N-(C₁-C₆-alkylsulfonyl)amino,

N-(C₁-C₆-alkyl)-N-(C₁-C₆-haloalkylsulfonyl)amino,

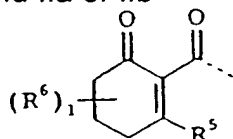
phenoxy, heterocycloxy, phenylthio or heterocyclylthio, it being possible for the four last-mentioned radicals to be partially or fully halogenated and/or to carry one to three of the following substituents :

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl,

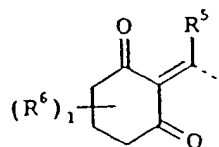
C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R², R³ are hydrogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl or halogen;

R⁴ is a compound IIa or IIb



IIa



IIb

where

R⁵ is halogen, OR⁷, SR⁷, SOR⁸, SO₂R⁸, OSO₂R⁸, POR⁸R⁹, OPR⁸R⁹,

OPOR⁸R⁹, OPSR⁸R⁹, NR¹⁰R¹¹, ONR¹¹R¹², N-linked heterocyclyl or O-(N-linked heterocyclyl), it being possible for the heterocyclyl radical of the two last-mentioned substituents to be partially or fully halogenated and/or to carry one to three of the following radicals: nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

C¹ cont
R⁶ is nitro, halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, di-(C₁-C₆-alkoxy)methyl, di-(C₁-C₆-alkylthio)methyl, (C₁-C₆-alkoxy)(C₁-C₆-alkylthio)methyl, hydroxyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-haloalkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylsulfonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-haloalkylcarbonyl, C₁-C₆-alkoxycarbonyl or C₁-C₆-haloalkoxycarbonyl;

or

two radicals, which are linked to the same carbon, together form an -O-(CH₂)_m-O-, -O-(CH₂)_m-S-, -S-(CH₂)_m-S-, -O-(CH₂)_n- or -S-(CH₂)_n chain which is unsubstituted or substituted by one to three radicals from the following group: halogen, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl or C₁-C₄-alkoxycarbonyl;

or

two radicals, which are linked to the same carbon, together form a -(CH₂)_p chain which possibly is interrupted by oxygen or sulfur and/or is unsubstituted or substituted by one to four radicals from the following group: halogen, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl or C₁-C₄-

alkoxycarbonyl;

or

two radicals, which are linked to the same carbon, together form a methyldene group which is unsubstituted or substituted by one or two radicals from the following group: halogen, hydroxyl, formyl, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-haloalkylsulfinyl, C₁-C₆-alkylsulfonyl or C₁-C₆-haloalkylsulfonyl;

or

two radicals, which are linked to the same carbon, together with this carbon form a carbonyl group;

or

two radicals, which are linked to different carbons, together form a -(CH₂)_n chain which is unsubstituted or substituted by one to three radicals from the following group: halogen, C₁-C₆-alkyl, C₁-C₆-alkoxy, hydroxyl or C₁-C₆-alkoxycarbonyl;

C' cont

R⁷ is C₁-C₆-alkyl, C₃-C₆-alkenyl, C₃-C₆-haloalkenyl, C₃-C₆-alkynyl, C₃-C₆-haloalkynyl, C₃-C₆-cyloalkyl, C₁-C₂₀-alkylcarbonyl, C₂-C₆-alkenylcarbonyl, C₂-C₆-alkynylcarbonyl, C₃-C₆-cyloalkylcarbonyl, C₁-C₆-alkoxycarbonyl, C₃-C₆-alkenyloxycarbonyl, C₃-C₆-alkynyloxycarbonyl, (C₁-C₂₀-alkylthio)carbonyl, C₁-C₆-alkylaminocarbonyl, C₃-C₆-alkenylaminocarbonyl, C₃-C₆-alkynylaminocarbonyl, N,N-di-(C₁-C₆-alkyl)aminocarbonyl, N-(C₃-C₆-alkenyl)-N-(C₁-C₆-alkyl)aminocarbonyl,

C' cont

N-(C₃-C₆-alkynyl)-N-(C₁-C₆-alkyl) aminocarbonyl ,
N-(C₁-C₆-alkoxy)-
N-(C₁-C₆-alkyl) aminocarbonyl , N-(C₃-C₆-alkenyl)-
N-(C₁-C₆-alkoxy) aminocarbonyl , N-(C₃-C₆-alkynyl)-
N-(C₁-C₆-alkoxy) aminocarbonyl, di-(C₁-C₆-alkyl)-
aminothiocarbonyl, C₁-C₆-alkylcarbonyl-C₁-C₆-alkyl,
C₁-C₆-alkoxyimino-C₁-C₆-alkyl,
N-(C₁-C₆-alkylamino) imino-C₁-C₆-alkyl or
N,N-di-(C₁-C₆-alkylamino)imino-C₁-C₆-alkyl, it being possible for
the above-mentioned alkyl, cycloalkyl and alkoxy radicals to be partially or
fully halogenated and/or to carry one to three of the following groups:
cyano, C₁-C₄-alkoxy, C₁-C₄-alkylthio, di-(C₁-C₄-alkyl) amino, C₁-C₄-
alkylcarbonyl, C₁-C₄-alkoxycarbonyl, C₁-C₄-alkoxy-C₁-C₄-
alkoxycarbonyl, di-(C₁-C₄-alkyl)amino-C₁-C₄-alkoxycarbonyl,
hydroxycarbonyl, C₁-C₄-alkylaminocarbonyl, di-(C₁-C₄-
alkyl)aminocarbonyl, aminocarbonyl, C₁-C₄-alkylcarbonyloxy or C₃-
C₆-cycloalkyl;
phenyl, heterocyclyl, phenyl-C₁-C₆-alkyl, heterocyclyl-C₁-C₆-alkyl,
phenylcarbonyl-C₁-C₆-alkyl, heterocyclylcarbonyl-C₁-C₆-alkyl,
phenylcarbonyl, heterocyclylcarbonyl, phenoxycarbonyl,
heterocycliloxy carbonyl, phenoxythiocarbonyl,
heterocycliloxythiocarbonyl, phenoxy-C₁-C₆-alkylcarbonyl,
heterocycliloxy-C₁-C₆-alkylcarbonyl, phenylaminocarbonyl, N-(C₁-
C₆-alkyl)-N-(phenyl)aminocarbonyl, heterocyclylaminocarbonyl, N-
(C₁-C₆-alkyl)-N-(heterocyclyl)aminocarbonyl, phenyl-C₂-C₆-
alkenylcarbonyl or heterocyclyl-C₂-C₆-alkenylcarbonyl, it being
possible for the phenyl and the heterocyclyl radical of the 20 last-
mentioned substituents to be partially or fully halogenated and/or to
carry one to three of the following radicals:
nitro, cyano, C₁-C₄-alkyl, C₁-C₄-halogenalkyl, C₁-C₄-alkoxy or C₁-C₄-

haloalkoxy;

R^8, R^9 are C_1 - C_6 -alkyl, C_3 - C_6 -alkenyl, C_3 - C_6 -haloalkenyl, C_3 - C_6 -alkynyl, C_3 - C_6 -haloalkynyl, C_3 - C_6 -cycloalkyl, hydroxyl, C_1 - C_6 -alkoxy, amino, C_1 - C_6 -alkylamino, C_1 - C_6 -haloalkylamino, di- $(C_1$ - C_6 -alkyl) amino or di- $(C_1$ - C_6 -haloalkyl) amino, it being possible for the abovementioned alkyl, cycloalkyl and alkoxy radicals to be partially or fully halogenated and/or to carry one to three of the following groups: cyano, C_1 - C_4 -alkoxy, C_1 - C_4 -alkylthio, di- $(C_1$ - C_4 -alkyl) amino, C_1 - C_4 -alkylcarbonyl, C_1 - C_4 -alkoxycarbonyl, C_1 - C_4 -alkoxy- C_1 - C_4 -alkoxycarbonyl, di- $(C_1$ - C_4 -alkyl) amino- C_1 - C_4 -alkoxycarbonyl, hydroxycarbonyl, C_1 - C_4 -alkylaminocarbonyl, di- $(C_1$ - C_4 -alkyl) aminocarbonyl, aminocarbonyl, C_1 - C_4 -alkylcarbonyloxy or C_3 - C_6 -cycloalkyl;

phenyl, heterocyclyl, phenyl- C_1 - C_6 -alkyl, heterocyclyl- C_1 - C_6 -alkyl, phenoxy, heterocycliloxy, it being possible for the phenyl and the heterocyclyl radical of the last-mentioned substituents to be partially or fully halogenated and/or to carry one to three of the following radicals:

nitro, cyano, C_1 - C_4 -alkyl, C_1 - C_4 -haloalkyl, C_1 - C_4 -alkoxy or C_1 - C_4 -haloalkoxy;

R^{10} is C_1 - C_6 -alkyl, C_3 - C_6 -alkenyl, C_3 - C_6 -haloalkenyl, C_3 - C_6 -alkynyl, C_3 - C_6 -haloalkynyl, C_3 - C_6 -cycloalkyl, hydroxyl, C_1 - C_6 -alkoxy, C_3 - C_6 -alkenyloxy, C_3 - C_6 -alkynyloxy, amino, C_1 - C_6 -alkylamino, di- $(C_1$ - C_6 -alkyl) amino or C_1 - C_6 -alkylcarbonylamino, where the abovementioned alkyl, cycloalkyl and alkoxy radicals may be partially or fully halogenated and/or may carry one to three radicals from the following group:

cyano, C_1 - C_4 -alkoxy, C_1 - C_4 -alkylthio, di- $(C_1$ - C_4 -alkyl) amino, C_1 - C_4 -alkylcarbonyl, C_1 - C_4 -alkoxycarbonyl, C_1 - C_4 -alkoxy- C_1 - C_4 -alkoxycarbonyl, di- $(C_1$ - C_4 -alkyl) amino- C_1 - C_4 -alkoxycarbonyl,

hydroxycarbonyl, C₁-C₄-alkylaminocarbonyl, di-(C₁-C₄-alkyl)aminocarbonyl, aminocarbonyl, C₁-C₄-alkylcarbonyloxy or C₃-C₆-cycloalkyl;

phenyl, heterocyclyl, phenyl-C₁-C₆-alkyl or heterocyclyl-C₁-C₆-alkyl, where the phenyl or heterocyclyl radical of the four last-mentioned substituents may be partially or fully halogenated and/or may carry one to three of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R¹¹, R¹² are C₁-C₆-alkyl, C₃-C₆-alkenyl, C₃-C₆-alkynyl or C₁-C₆-alkylcarbonyl;

l is 0 to 6;

m is 2 to 4;

n is 1 to 5;

p is 2 to 5;

and their agriculturally useful salts.

2. (amended) A cyclohexenonequinolinoyl derivative of the formula I as claimed in claim 1 where

R¹ is halogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkoxy, C₁-C₆-alkylthio, heterocycloxy or phenylthio, it being possible for the two last-mentioned radicals to be partially or fully halogenated and/or to carry one to three of the substituents mentioned below:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R⁵ is halogen, OR⁷, SR⁷, SOR⁸, SO₂R⁸, OSO₂R⁸, OPR⁸R⁹, OPOR⁸R⁹, OPSR⁸R⁹, NR¹⁰R¹¹ or N-bonded heterocyclyl, which is unsubstituted or partially or fully halogenated and/or carries one to three of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy .

3. (twice amended) A cyclohexenonequinolinoyl derivative of the formula I as

claimed in claim 1, where

R⁵ is halogen, OR⁷, NR¹⁰R¹¹ or N-bonded heterocyclyl which is unsubstituted or partially or fully halogenated and/or carries one to three of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy.

4. (twice amended) A cyclohexenonequinolinoyl derivative of the formula I as claimed in claim 1, where

R⁷ is C₁-C₆-alkyl, C₁-C₂₀-alkylcarbonyl, C₁-C₆-alkoxycarbonyl, (C₁-C₂₀-alkylthio)carbonyl, N,N-di-(C₁-C₆-alkyl)aminocarbonyl, phenyl, phenylcarbonyl or phenoxy-C₁-C₆-alkylcarbonyl, it being possible for the phenyl radical of the three last-mentioned substituents to be partially or fully halogenated and/or to carry one to three of the following radicals:
nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R¹⁰ is C₁-C₆-alkyl or C₁-C₆-alkoxy;

R¹¹ is C₁-C₆-alkyl.

5. (twice amended) A cyclohexenonequinolinoyl derivative of the formula I as claimed in claim 1, where

R⁶ is nitro, halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, di-(C₁-C₆-alkoxy)methyl, di-(C₁-C₆-alkylthio)methyl, (C₁-C₆-alkoxy)(C₁-C₆-alkylthio)-methyl, hydroxyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-haloalkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylsulfonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-haloalkylcarbonyl, C₁-C₆-alkoxycarbonyl or C₁-C₆-haloalkoxycarbonyl;

or

two radicals, which are linked to the same carbon, together form

an $-O-(CH_2)_m-O-$, $-O-(CH_2)_m-S-$, $-S-(CH_2)_m-S-$, $-O-(CH_2)_n-$ or $-S-(CH_2)_n$ chain which is unsubstituted or substituted by one to three radicals from the following group :
halogen, cyano, C_1-C_4 -alkyl, C_1-C_4 -haloalkyl or C_1-C_4 -alkoxycarbonyl;

or

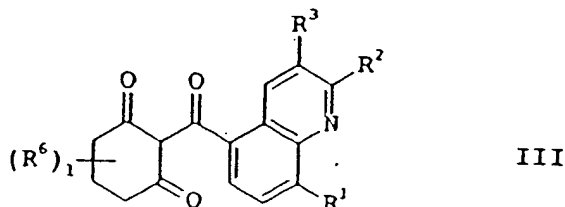
two radicals, which are linked to the same carbon, together form a $-(CH_2)_p$ chain which possibly is interrupted by oxygen or sulfur and which is unsubstituted or substituted by one to four radicals from the following group :

halogen, cyano, C_1-C_4 -alkyl, C_1-C_4 -haloalkyl or C_1-C_4 -alkoxycarbonyl ;

or

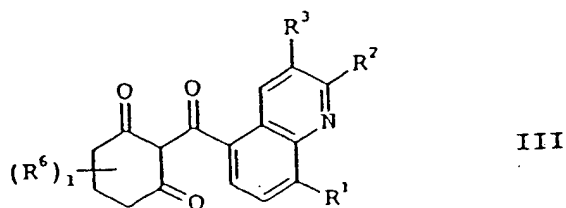
two radicals, which are linked to the same carbon, together with this carbon form a carbonyl group.

6. A process for preparing compounds of the formula I as claimed in claim 1 where R^5 = halogen, which comprises reacting a cyclohexanedione derivative of the formula III,

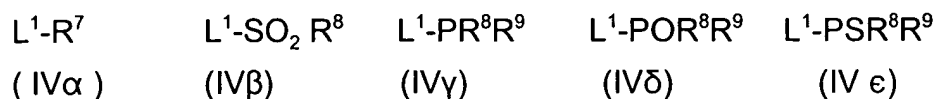


where the variables R^1 to R^3 , and I are each as defined in claim 1, with a halogenating agent.

7. A process for preparing compounds of the formula I as claimed in claim 1 where R^5 = OR^7 , OSO_2R^8 , OPR^8R^9 , $OPOR^8R^9$ or $OPSR^8R^9$, which comprises reacting a cyclohexanedione derivative of the formula III,

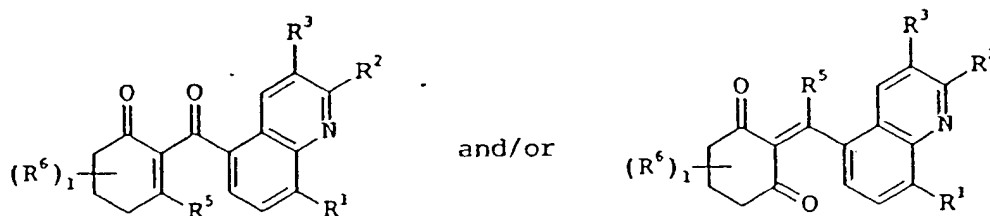


where the variables R^1 to R^3 , and I are each as defined in claim 1, with a compound of the formula IV α , IV β , IV γ , IV δ or IV ϵ ,



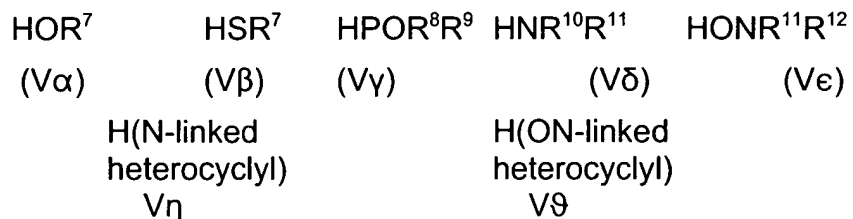
where the variables R^7 to R^9 are each as defined in claim 1 and L^1 is a nucleophilically replaceable leaving group.

8. A process for preparing compounds of the formula I as claimed in claim 1 where $R^5 = OR^7, SR^7, POR^8R^9, NR^{10}R^{11}, ONR^{11}R^{12}$, N-linked heterocyclyl or O-(N-linked heterocyclyl), which comprises reacting a compound of the formula I α (\equiv I where $R^5 = \text{halogen}, OSO_2R^8$),



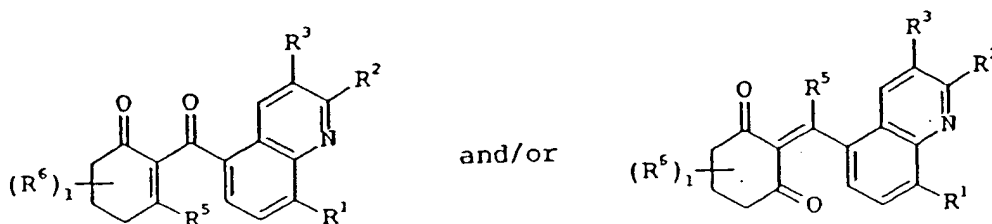
I where $R^5 = \text{halogen or } OSO_2R^8$

where the variables R^1 to R^3 , R^6 and I are each as defined in claim 1, with a compound of the formula V α , V β , V γ , V δ , V ϵ , V η , V θ ,



where the variables R^7 to R^{12} are each as defined in claim 1, if appropriate in the presence of a base.

9. A process for preparing compounds of the formula I as claimed in claim 1, where $R^5 = \text{SOR}^8$, SO_2R^8 , which comprises reacting a compound of the formula I β (\equiv I where $R^5 = \text{SR}^8$),



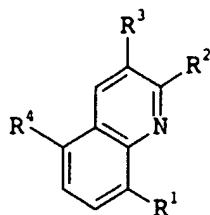
I where $R^5 = \text{SR}^8$

where the variables R^1 to R^8 and I are each as defined in claim 1, with an oxidizing agent.

10. (twice amended) A composition, comprising a herbicidally effective amount of at least one cyclohexenonequinolinoyl derivative of the formula I or an agriculturally useful salt of formula I as claimed in claim 1 and auxiliaries which are conventionally used for formulating crop protection agents.
11. (twice amended) A process for preparing a composition as claimed in claim 10, which comprises mixing a herbicidally effective amount of at least one cyclohexenonequinolinoyl derivative of the formula I or an agriculturally useful salt of formula I and auxiliaries which are conventionally used for formulating crop protection agents.
12. A method for controlling undesirable vegetation, which comprises allowing a herbicidally effective amount of at least one cyclohexenonequinolinoyl derivative

of the formula I or an agriculturally useful salt of formula I as claimed in claim 1
to act on plants, their habitat and/or on seeds.

14. (amended) A cyclohexenonequinolinoyl derivative of the formula I



where:

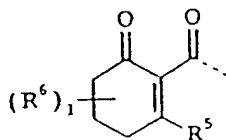
C3

R¹ is hydrogen, nitro, halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkoxyiminomethyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylsulfonyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylsulfonyl, aminosulfonyl, N-(C₁-C₆-alkyl)aminosulfonyl, N, N-di-(C₁-C₆-alkyl) aminosulfonyl , N-(C₁-C₆-alkylsulfonyl)amino, N-(C₁-C₆-haloalkylsulfonyl)amino, N-(C₁-C₆-alkyl)-N-(C₁-C₆-alkylsulfonyl)amino, N-(C₁-C₆-alkyl)-N-(C₁-C₆-haloalkylsulfonyl)amino, phenoxy, heterocycloxy, phenylthio or heterocyclylthio, it being possible for the four last-mentioned radicals to be partially or fully halogenated and/or to carry one to three of the following substituents : nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl,

C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R², R³ are hydrogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl or halogen;

R⁴ is a compound IIa



where

IIa

R⁵ is halogen, OR⁷, SR⁷, SOR⁸, SO₂R⁸, OSO₂R⁸, POR⁸R⁹, OPR⁸R⁹, OPOR⁸R⁹, OPSR⁸R⁹, NR¹⁰R¹¹, ONR¹¹R¹², N-linked heterocyclyl or O-(N-linked heterocyclyl), it being possible for the heterocyclyl radical of the two last-mentioned substituents to be partially or fully halogenated and/or to carry one to three of the following radicals: nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R⁶ is nitro, halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, di-(C₁-C₆-alkoxy)methyl, di-(C₁-C₆-alkylthio)methyl, (C₁-C₆-alkoxy)(C₁-C₆-alkylthio)methyl, hydroxyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-haloalkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylsulfonyl, C₁-C₆-alkylcarbonyl,

C₁-C₆-haloalkylcarbonyl, C₁-C₆-alkoxycarbonyl or

C₁-C₆-haloalkoxycarbonyl;

or

two radicals, which are linked to the same carbon,

together form an -O-(CH₂)_m-O-, -O-(CH₂)_m-S-, -S-(CH₂)_m-S-, -O-

(CH₂)_n- or -S-(CH₂)_n chain which is unsubstituted or substituted by

one to three radicals from the following group:

halogen, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl or C₁-C₄-

alkoxycarbonyl;

or

two radicals, which are linked to the same carbon,

together form a -(CH₂)_p chain which possibly is interrupted by

oxygen or sulfur and/or is unsubstituted or substituted by one to

four radicals from the following group:

halogen, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl or C₁-C₄-

alkoxycarbonyl;

or

two radicals, which are linked to the same carbon,

together form a methylenide group which is unsubstituted or

substituted by one or two radicals from the following group:

halogen, hydroxyl, formyl, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-

C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-haloalkylsulfinyl, C₁-C₆-alkylsulfonyl or C₁-C₆-haloalkylsulfonyl;

or

two radicals, which are linked to the same carbon, together with this carbon form a carbonyl group;

or

two radicals, which are linked to different carbons, together form a -(CH₂)_n chain which is unsubstituted or substituted by one to three radicals from the following group:

halogen, C₁-C₆-alkyl, C₁-C₆-alkoxy, hydroxyl or C₁-C₆-alkoxycarbonyl;

C13 cont

R⁷ is C₁-C₆-alkyl, C₃-C₆-alkenyl, C₃-C₆-haloalkenyl, C₃-C₆-alkynyl, C₃-C₆-haloalkynyl, C₃-C₆-cyloalkyl, C₁-C₂₀-alkylcarbonyl, C₂-C₆-alkenylcarbonyl, C₂-C₆-alkynylcarbonyl, C₃-C₆-cyloalkylcarbonyl, C₁-C₆-alkoxycarbonyl, C₃-C₆-alkenyloxycarbonyl, C₃-C₆-alkynyloxycarbonyl, (C₁-C₂₀-alkylthio)carbonyl, C₁-C₆-alkylaminocarbonyl,

C₃-C₆-alkenylaminocarbonyl,

C₃-C₆-alkynylaminocarbonyl,

N,N-di-(C₁-C₆-alkyl)aminocarbonyl,

N-(C₃-C₆-alkenyl)-N-(C₁-C₆-alkyl)aminocarbonyl,

N-(C₃-C₆-alkynyl)-N-(C₁-C₆-alkyl)aminocarbonyl,

N-(C₁-C₆-alkoxy)-

N-(C₁-C₆-alkyl)aminocarbonyl, N-(C₃-C₆-alkenyl)-

N-(C₁-C₆-alkoxy)aminocarbonyl, N-(C₃-C₆-alkynyl)-

N-(C₁-C₆-alkoxy)aminocarbonyl, di-(C₁-C₆-alkyl)-

aminothiocarbonyl, C₁-C₆-alkylcarbonyl-C₁-C₆-alkyl,

C₁-C₆-alkoxyimino-C₁-C₆-alkyl,

N-(C₁-C₆-alkylamino)imino-C₁-C₆-alkyl or

N,N-di-(C₁-C₆-alkylamino)imino-C₁-C₆-alkyl, it being possible for

the above-mentioned alkyl, cycloalkyl and alkoxy radicals to be partially or fully halogenated and/or to carry one to three of the following groups:

cyano, C₁-C₄-alkoxy, C₁-C₄-alkylthio, di-(C₁-C₄-alkyl)amino, C₁-C₄-

alkylcarbonyl, C₁-C₄-alkoxycarbonyl, C₁-C₄-alkoxy-C₁-C₄-alkoxycarbonyl,

di-(C₁-C₄-alkyl)amino-C₁-C₄-alkoxycarbonyl, hydroxycarbonyl, C₁-C₄-

alkylaminocarbonyl, di-(C₁-C₄-alkyl)aminocarbonyl, aminocarbonyl, C₁-C₄-

alkylcarbonyloxy or C₃-C₆-cycloalkyl;

phenyl, heterocyclyl, phenyl-C₁-C₆-alkyl, heterocyclyl-C₁-C₆-alkyl,

C₃ cont

phenylcarbonyl-C₁-C₆-alkyl, heterocyclylcarbonyl-C₁-C₆-alkyl,
phenylcarbonyl, heterocyclylcarbonyl, phenoxy carbonyl,
heterocyclyloxy carbonyl, phenoxythiocarbonyl,
heterocyclyloxythiocarbonyl, phenoxy-C₁-C₆-alkylcarbonyl,
heterocyclyloxy-C₁-C₆-alkylcarbonyl, phenylaminocarbonyl, N-(C₁-C₆-
alkyl)-N-(phenyl)aminocarbonyl, heterocyclylaminocarbonyl, N-(C₁-C₆-
alkyl)-N-(heterocyclyl)aminocarbonyl, phenyl-C₂-C₆-alkenylcarbonyl or
heterocyclyl-C₂-C₆-alkenylcarbonyl, it being possible for the phenyl and
the heterocyclyl radical of the 20 last-mentioned substituents to be
partially or fully halogenated and/or to carry one to three of the following
radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-halogenalkyl, C₁-C₄-alkoxy or C₁-C₄-
haloalkoxy;

R⁸, R⁹ are C₁-C₆-alkyl, C₃-C₆-alkenyl, C₃-C₆-haloalkenyl, C₃-C₆-alkynyl, C₃-
C₆-haloalkynyl, C₃-C₆-cycloalkyl, hydroxyl, C₁-C₆-alkoxy, amino, C₁-
C₆-alkylamino, C₁-C₆-haloalkylamino, di-(C₁-C₆-alkyl) amino or di-
(C₁-C₆-haloalkyl)amino, it being possible for the abovementioned
alkyl, cycloalkyl and alkoxy radicals to be partially or fully
halogenated and/or to carry one to three of the following groups:
cyano, C₁-C₄-alkoxy, C₁-C₄-alkylthio, di-(C₁-C₄- alkyl) amino, C₁-C₄-
alkylcarbonyl, C₁-C₄-alkoxycarbonyl, C₁-C₄-alkoxy-C₁-C₄-alkoxycarbonyl,

di-(C₁-C₄-alkyl)amino-C₁-C₄-alkoxycarbonyl,
hydroxycarbonyl, C₁-C₄-alkylaminocarbonyl, di-(C₁-C₄-
alkyl)aminocarbonyl, aminocarbonyl, C₁-C₄-alkylcarbonyloxy or C₃-
C₆-cycloalkyl;
phenyl, heterocyclyl, phenyl-C₁-C₆-alkyl, heterocyclyl-C₁-C₆-alkyl, phenoxy,
heterocycliloxy, it being possible for the phenyl and the heterocyclyl
radical of the last-mentioned substituents to be partially or fully
halogenated and/or to carry one to three of the following radicals:
nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-
haloalkoxy;

C3 cont
R¹⁰ is C₁-C₆-alkyl, C₃-C₆-alkenyl, C₃-C₆-haloalkenyl, C₃-C₆-alkynyl, C₃-
C₆-haloalkynyl, C₃-C₆-cycloalkyl, hydroxyl, C₁-C₆-alkoxy, C₃-C₆-
alkenyloxy, C₃-C₆-alkynyloxy, amino, C₁-C₆-alkylamino, di-(C₁-C₆-
alkyl)amino or C₁-C₆-alkylcarbonylamino, it being possible for the
abovementioned alkyl, cycloalkyl and alkoxy radicals to be partially
or fully halogenated and/or to carry one to three radicals from the
following group:

cyano, C₁-C₄-alkoxy, C₁-C₄-alkylthio, di-(C₁-C₄-alkyl)amino, C₁-C₄-
alkylcarbonyl, C₁-C₄-alkoxycarbonyl, C₁-C₄-alkoxy-C₁-C₄-
alkoxycarbonyl, di-(C₁-C₄-alkyl)amino-C₁-C₄-alkoxycarbonyl,
hydroxycarbonyl, C₁-C₄-alkylaminocarbonyl, di-(C₁-C₄-

alkyl)aminocarbonyl, aminocarbonyl, C₁-C₄-alkylcarbonyloxy or C₃-C₆-cycloalkyl;

phenyl, heterocyclyl, phenyl-C₁-C₆-alkyl or heterocyclyl-C₁-C₆-alkyl,

it being possible for the phenyl or heterocyclyl radical of the four

last-mentioned substituents to be partially or fully halogenated

and/or to carry one to three of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R¹¹, R¹² are C₁-C₆-alkyl, C₃-C₆-alkenyl, C₃-C₆-alkynyl or C₁-C₆-alkylcarbonyl;

l is 0 to 6;

m is 2 to 4;

n is 1 to 5;

p is 2 to 5;

and their agriculturally useful salts.

15. (amended) A cyclohexenonequinolinoyl derivative of the formula I as claimed in claim 14, where

R¹ is halogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkoxy, C₁-C₆-alkylthio, heterocycloxy or phenylthio, it being possible for the two last-mentioned radicals to be partially or fully halogenated and/or to carry one to three of the substituents mentioned below:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-

haloalkoxy;

R⁵ is halogen, OR⁷, SR⁷, SOR⁸, SO₂R⁸, OSO₂R⁸, OPR⁸R⁹, OPOR⁸R⁹, OPSR⁸R⁹, NR¹⁰R¹¹ or N-bonded heterocyclyl which is unsubstituted or partially or fully halogenated and/or carries one to three of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy .

16. (amended) A cyclohexenonequinolinoyl derivative of the formula I as claimed in claim 14, where

C³ cont
R⁵ is halogen, OR⁷, NR¹⁰R¹¹ or N-bonded heterocyclyl which is unsubstituted or partially or fully halogenated and/or carries one to three of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy.

17. (amended) A cyclohexenonequinolinoyl derivative of the formula I as claimed in claim 14, where

R⁷ is C₁-C₆-alkyl, C₁-C₂₀-alkylcarbonyl, C₁-C₆-alkoxycarbonyl, (C₁-C₂₀-alkylthio)carbonyl, N,N-di-(C₁-C₆-alkyl)aminocarbonyl, phenyl, phenylcarbonyl or phenoxy-C₁-C₆-alkylcarbonyl, it being possible for the phenyl radical of the three last-mentioned substituents to be partially or fully halogenated

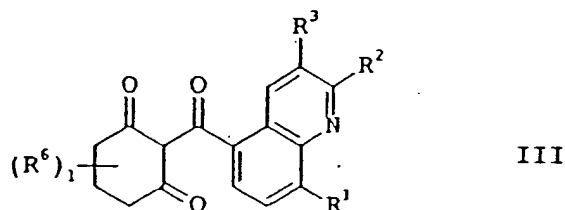
and/or to carry one to three of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R¹⁰ is C₁-C₆-alkyl or C₁-C₆-alkoxy;

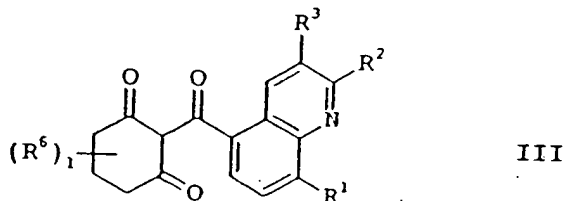
R¹¹ is C₁-C₆-alkyl.

18. A process for preparing compounds of the formula I as claimed in claim 14 where R⁵ = halogen, which comprises reacting a cyclohexanedione derivative of the formula III,

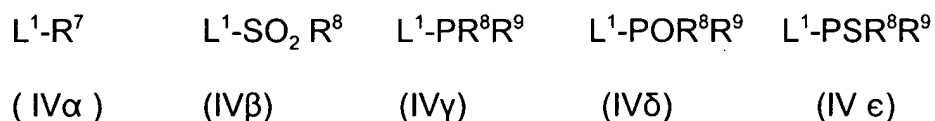


where the variables R¹ to R³, and I are each as defined in claim 14, with a halogenating agent.

19. A process for preparing compounds of the formula I as claimed in claim 14 where R⁵ = OR⁷, OSO₂R⁸, OPR⁸R⁹, OPOR⁸R⁹ or OPSR⁸R⁹, which comprises reacting a cyclohexanedione derivative of the formula III,

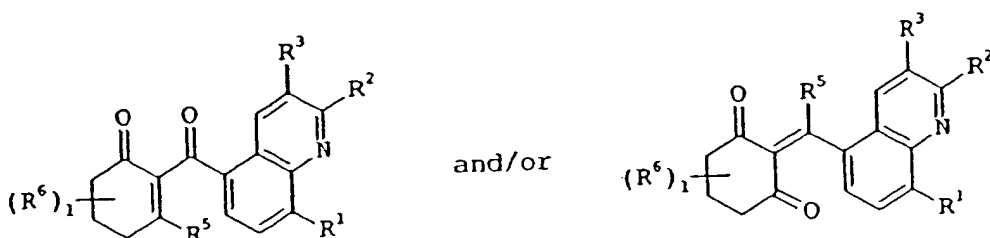


where the variables R^1 to R^3 , and I are each as defined in claim 14, with a compound of the formula $IV\alpha$, $IV\beta$, $IV\gamma$, $IV\delta$ or $IV\epsilon$,



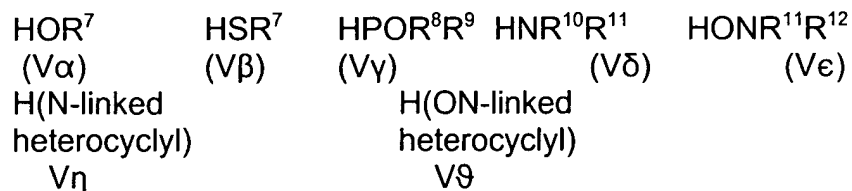
where the variables R^7 to R^9 are each as defined in claim 14 and L^1 is a nucleophilically replaceable leaving group.

20. A process for preparing compounds of the formula I as claimed in claim 14 where $R^5 = OR^7, SR^7, POR^8R^9, NR^{10}R^{11}, ONR^{11}R^{12}$, N-linked heterocyclyl or O-(N-linked heterocyclyl), which comprises reacting a compound of the formula $I\alpha$ ($\equiv I$ where $R^5 = \text{halogen, } OSO_2R^8$),



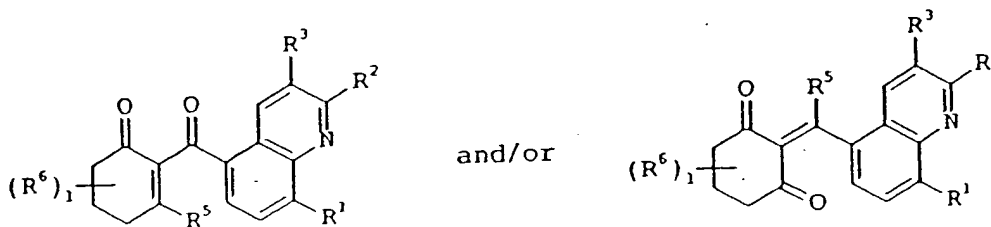
I where $R^5 = \text{halogen or } OSO_2R^8$

where the variables R^1 to R^3 , and I are each as defined in claim 14, with a compound of the formula $V\alpha, V\beta, V\gamma, V\delta, V\epsilon, V\eta, V\theta$,



where the variables R^7 to R^{12} are each as defined in claim 14, if appropriate in the presence of a base.

21. A process for preparing compounds of the formula I as claimed in claim 14 where $\text{R}^5 = \text{SOR}^8$, SO_2R^8 , which comprises reacting a compound of the formula I β (\equiv I where $\text{R}^5 = \text{SR}^8$),



I where $\text{R}^5 = \text{SR}^8$

where the variables R^1 to R^5 , R^7 , R^8 and I are each as defined in claim 14, with an oxidizing agent.

22. (amended) A composition, comprising a herbicidally effective amount of at least one cyclohexenonequinolinoyl derivative of the formula I or an agriculturally useful salt of formula I as claimed in claim 14 and auxiliaries which are

conventionally used for formulating crop protection agents.

23. (amended) A process for preparing a composition as claimed in claim 22, which comprises mixing a herbicidally effective amount of at least one cyclohexenonequinolinoyl derivative of the formula I or an agriculturally useful salt of formula I and auxiliaries which are conventionally used for formulating crop protection agents.
-

24. A method for controlling undesirable vegetation, which comprises allowing a herbicidally effective amount of at least one cyclohexenonequinolinoyl derivative of the formula I or an agriculturally useful salt of formula I as claimed in claim 14 to act on plants, their habitat and/or on seeds.